

What is claimed is:

1. A modular door trim panel assembly comprising:

a molded substrate having a first side defining an A-side surface that is visible from the interior of an automotive vehicle and a second side opposite said first side that defines a B-side surface adjacent a vehicle door, said substrate including a pair of side terminal edges and a lower terminal edge extending therebetween; and

at least one seal that is co-molded while said substrate is formed and bonded to said B-side of said substrate, said seal extending substantially parallel to said pair of side terminal edges and said lower terminal edge of said substrate and adapted to prevent the entry of moisture between said B-side of said substrate and the vehicle door.
2. A modular door trim panel assembly as set forth in claim 1 wherein said seal extends from said B-side surface to a vehicle door to sealingly contact a predetermined area of the vehicle door.
3. A modular door trim panel assembly as set forth in claim 2 wherein a portion of said pair of side terminal edges and said lower terminal edge are contoured to receive said seal and facilitate contact between said seal and the vehicle door.
4. A modular door trim panel assembly as set forth in claim 1 wherein said seal is made of a polymer material suitable for use within an injection mold that maintains a flexible quality when cured.

5. A modular door trim panel assembly as set forth in claim 1 wherein said molded substrate further includes at least one aperture adapted to receive a door trim panel component.

6. A modular door trim panel assembly as set forth in claim 5 further including at least one door trim panel component disposed within said aperture and mounted to said molded substrate, said door trim panel component having at least one surface visible from the interior of an automotive vehicle.

7. A modular door trim panel assembly as set forth in claim 5 further including a second seal that is co-molded while said substrate is formed and bonded to said B-side of said substrate, said seal extending substantially around said aperture and adapted to prevent the entry of moisture between said B-side of said substrate and the vehicle door through said aperture.

8. A modular door trim panel assembly as set forth in claim 7 wherein said second seal extends from said B-side surface to a vehicle door to sealingly contact a predetermined area of the vehicle door adjacent said aperture.

9. A modular door trim panel assembly as set forth in claim 7 wherein said seal is made of a polymer material suitable for use within an injection mold that maintains a flexible quality when cured.

10. A vehicle door assembly comprising:

a door frame adapted to be pivotally mounted to an automotive vehicle body, said door frame having a first surface facing the interior of an automotive vehicle and a second surface opposite said first surface; and

a modular door trim panel secured to said first surface of said door frame, said modular door trim panel including a molded substrate having a first side defining an A-side surface that is visible from the interior of an automotive vehicle and a second side opposite said first side that defines a B-side surface adjacent said first surface of said vehicle door, said substrate including a pair of side terminal edges and a lower terminal edge extending therebetween, said modular door further including at least one seal that is co-molded while said substrate is formed and bonded to said B-side of said substrate, said seal extending substantially parallel to said pair of side terminal edges and said lower terminal edge of said substrate and adapted to prevent the entry of moisture between said B-side of said substrate and said vehicle door.

11. A vehicle door assembly as set forth in claim 10 wherein said seal extends from said B-side surface to a vehicle door to sealingly contact said first surface of said vehicle door.

12. A vehicle door assembly as set forth in claim 10 wherein a portion of said pair of side terminal edges and said lower terminal edge are contoured to receive said seal and facilitate contact between said seal and said first surface of said vehicle door.

13. A vehicle door assembly as set forth in claim 10 wherein said seal is made of a polymer material suitable for use within an injection mold that maintains a flexible quality when cured.

14. A vehicle door assembly as set forth in claim 10 said substrate further includes at least one aperture adapted to receive a door trim panel component.

15 A vehicle door assembly as set forth in claim 14 further including at least one door trim panel component disposed within said aperture and mounted to said substrate, said door trim panel component having at least one surface visible from the interior of an automotive vehicle.

16. A vehicle door assembly as set forth in claim 14 further including a second seal that is co-molded while said substrate is formed and bonded to said B-side of said substrate, said seal extending substantially around said aperture and adapted to prevent the entry of moisture between said B-side of said substrate and said vehicle door through said aperture.

17. A vehicle door assembly as set forth in claim 16 wherein said second seal extends from said B-side surface to said vehicle door to sealingly contact said first surface of said vehicle door adjacent said aperture.

18. A vehicle door assembly as set forth in claim 16 wherein said seal is made of a polymer material suitable for use within an injection mold that maintains a flexible quality when cured.

19. The method of manufacturing a modular door trim panel assembly, said method comprising the steps of:

actuating a core so as to extend into a mold cavity and partition at least one area of said mold cavity to prevent a first molten thermoplastic material from completely filling said mold cavity;

injecting a first molten thermoplastic material into said mold cavity so as to fill said mold cavity thereby forming a rigid substrate;

retracting said core from the mold cavity to provide at least one secondary void within said mold cavity; and

injecting a second molten thermoplastic material into said secondary void of said mold cavity to form at least one flexible seal bonded to at least a portion of said substrate.

20. The method as set forth in claim 19 wherein said step of injecting a first thermoplastic material further defines a substrate a having a first side defining an A-side surface that is visible from the interior of an automotive vehicle and a second side opposite said first side that defines a B-side surface adjacent a vehicle door, said substrate including a pair of side terminal edges and a lower terminal edge extending therebetween, said second thermoplastic material bonded to said B-side surface to define at least one seal co-molded while said substrate is formed and bonded to said B-side of said substrate and adapted to prevent the entry of moisture between said B-side of said substrate and the vehicle door.